WHAT IS CLAIMED IS:

1. An object recognition method comprising at least a learning step of learning a first entered image, and a recognition step of recognizing a second entered image, wherein said learning step includes:

a step of entering the first image including the object to be learned,

a step of dividing said entered image into a first partial image,

a step of classifying said first partial image into plural classes,

a step of calculating a matrix for feature extraction from said partial images classified into classes,

a step of calculating a first feature by using said matrix for feature extraction from said partial images classified into classes, and

a step of storing the data of said first feature, and

said recognition step includes:

a step of receiving a second image including the object to be recognized,

a step of dividing said entered image into a second partial image,

a step of calculating a second feature by using said matrix for feature extraction from said second partial image,

a step of calculating the similarity measure of the both by

using said stored first feature data and second feature,

a step of recognizing the object in said second image by using said similarity measure, and

a step of issuing said result of recognition.

2. The object recognition method of claim 1, wherein the step of dividing into first and second partial images is to limit a partial region of input image.

3. The object recognition method of claim 1, wherein the step of entering the first image including the object to be learned is to enter plural pieces of image information mutually different in properties about one object to be learned, said learning step further includes a step of integrating said plural pieces of information and generating first integrated information, said first partial image includes said first integrated information, said step of entering the second image including the object to be recognized is to enter plural pieces of image information mutually different in properties about one object to be recognized, said recognizing step further includes a step of integrating said plural pieces of information and generating second integrated information, and said second partial image includes second integrated information.

4. The object recognition method of claim 3, wherein said integrated information includes at least optical information and geometrical information.

5. The object recognition method of claim 4, wherein at

least the optical information is contrast distribution information of image, or the geometrical information is edge information of image.

6. The object recognition method of claim 1, wherein the class is classified by elements including at least a pair of the object position and kind.

7. The object recognition method of claim 6, wherein the object position is expressed by the distance to the object.

8. The object recognition method of claim 1, wherein the matrix for feature extraction is determined from the within-class covariance matrix and between-class covariance matrix.

9. The object recognition method of claim 8, wherein the matrix for feature extraction is determined so as to maximize the Fisher ratio calculated from the within-class covariance matrix and between-class covariance matrix.

10. The object recognition method of claim 1, wherein the similarity measure is judged by the normalized correlation in the feature space.

11. An object recognition apparatus comprising at least learning means for learning a first entered image, and recognition means for recognizing a second entered image, wherein said learning means includes:

means for entering the first image including the object to be learned,

means for dividing said entered image into a first partial

image,

means for classifying said first partial image into plural classes,

means for calculating a matrix for feature extraction from said partial images classified into classes,

means for calculating a first feature by using said matrix for feature extraction from said partial images classified into classes, and

means for storing the data of said first feature, and

said recognition means includes:

means for receiving a second image including the object to be recognized,

means for dividing said entered image into a second partial image,

means for calculating a second feature by using said matrix for feature extraction from said second partial image,

means for calculating the similarity measure of the both by using said stored first feature data and second feature,

means for recognizing the object in said second image by using said similarity measure, and

means for issuing said result of recognition.

12. A recording medium in which a computer program is recorded, being a recording medium of which program presents a method, being read by the computer and installed, for recognizing a specific object, said method having at least a

learning step of learning a first entered image, and a recognition
step of recognizing a second entered image, wherein said
learning step includes:

a step of entering the first image including the object to
be learned,

a step of dividing said entered image into a first partial
image,

a step of classifying said first partial image into plural
classes,

a step of calculating a matrix for feature extraction from
said partial images classified into classes,

a step of calculating a first feature by using said matrix
for feature extraction from said partial images classified into
classes, and

a step of storing the data of said first feature, and

said recognition step includes:

a step of receiving a second image including the object to
be recognized,

a step of dividing said entered image into a second partial
image,

a step of calculating a second feature by using said matrix
for feature extraction from said second partial image,

a step of calculating the similarity measure of the both by
using said   stored first feature data and second feature,

a step of recognizing the object in said second image by

using said similarity measure, and

a step of issuing said result of recognition.

13. A recording medium in which a computer program is recorded, being a recording medium of which program presents a method, being read by the computer and installed, for recognizing a specific object, recording an object recognition program including at least the following steps:

a step of receiving an image including the object to be recognized,

a step of dividing said entered image into a partial image,

a step of calculating an object feature by using a specific matrix for feature extraction from said partial image,

a step of calculating the similarity measure of the both by using data of a learning feature learned and stored preliminarily and said object feature,

a step of recognizing the object in said image by using said similarity measure, and

a step of issuing said result of recognition.

14. The recording medium of claim 13, wherein the step of entering the image including the object to be recognized is to enter plural pieces of image information mutually different in properties about one object to be recognized, and said partial image includes integrated information of said plural pieces of image information.

15. The object recognition method of claim 1, wherein

the step of entering the first image and the step of dividing into a first partial image may be replaced by a step of creating by an artificial synthesizing technique.

16. The object recognition method of claim 1, wherein the learning step further includes a step of converting the scale of the first partial image in each class.

17. The object recognition method of claim 1, wherein the learning step further includes a step of cutting out into different shapes in every class when dividing the first partial image.

18. The object recognition method of claim 1, wherein the class is classified by the difference in the shape of said object to be learned.

19. The object recognition method of claim 1, wherein the class is classified by the difference in the size of said object to be learned.

20. The object recognition apparatus of claim 11, wherein the scale of partial image is converted in every class, and a feature vector is created.

21. The object recognition apparatus of claim 11, wherein the cutting shape of partial image is set in every class, and a feature vector is created.

22. The object recognition apparatus of claim 11, wherein the class is classified by the difference in the shape of partial image.

23. The object recognition apparatus of claim 11, wherein the class is classified by the difference in the size of partial image.